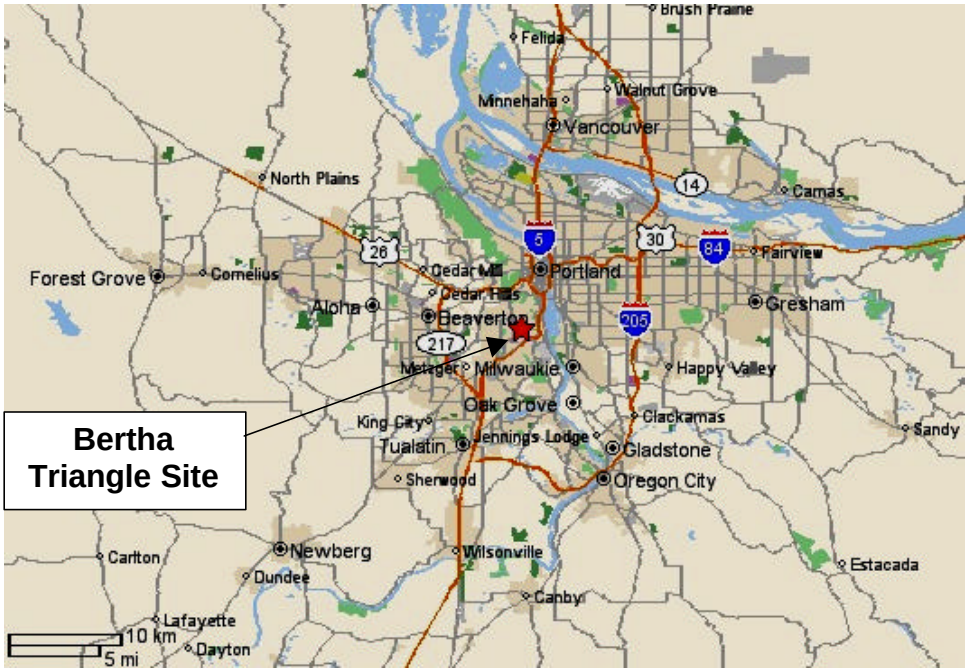
Targeted Brownfield Assessment
"Bertha Triangle" Property
Portland, Oregon

Project Overview

In April 2002, the Oregon Department of Environmental Quality (DEQ) completed a Targeted Brownfield Assessment (TBA) at the Bertha Triangle site in Portland, Oregon, with funding provided by EPA Region 10. The TBA was designed to investigate the nature and extent of contamination from auto wrecking/service station operations in the 1930s and 40s, and from fill of unknown origin that had been used to level the hilly site. Owned by the Oregon Department of Transportation (ODOT), this vacant 0.7-acre property sits on a triangular parcel adjacent to a bustling commercial district in Portland's Hillsdale neighborhood. ODOT wished to sell the property to facilitate a mixed-use redevelopment envisioned by the non-profit Housing Development Center (HDC) -- ground-floor commercial space with residential units for seniors above and vehicle parking below. But HDC needed more information on site contamination before it could proceed with the project, and ODOT therefore requested a TBA in October 2001.

Site Background



From about 1900 to 1953, the site was part of a dairy, with a hay barn on its southern end. During the 1920s, the site also housed Bertha Station, a stop on Southern Pacific's passenger rail line. Beginning in the mid-1930s, Capitol Hwy. Auto Parts ran a junk yard and filling-station business for 7 or 8 years on the northern part of the site, including auto fueling/repair/dismantling, oil changing and storage, and battery rebuilding. Although few records of these activities remain (for example, the exact location of the wrecking yard is not known), anecdotal evidence suggested that spills and ground disposal of hazardous liquids had occurred. The status of old underground storage tanks (USTs) installed along the northeastern edge of the site was unknown. ODOT purchased the site in 1957, and had leased it intermittently, primarily to tenants that used it for storage. Recent investigations of two upgradient properties to the northeast -- a dry cleaner and a former service station -- had shown contamination on both, and had also documented groundwater contamination on the northern portion of Bertha Triangle itself. It was unclear whether this on-site contamination had migrated from these other facilities or had resulted from historic auto-related activities. Uncertainty about the nature/location of these past site operations and of imported fill led DEQ to suspect a wide range of potential site contaminants, such as petroleum hydrocarbons, volatile/semivolatile organic compounds (VOCs/SVOCs), polychlorinated biphenyls (PCBs), pesticides, and metals.

What We Did

Beginning in November 2001, DEQ developed a scope of work that was responsive to ODOT's and HDC's needs, and made arrangements for sampling. In January 2002, DEQ conducted a geophysical survey that did not show the obvious presence of abandoned USTs, although results were inconclusive. DEQ then deployed its hydraulic push-probe device to obtain samples of near-surface soil, subsurface soil, and groundwater. Probing depths extended to about 20 feet below ground surface. Four of the groundwater probe/sampling locations were completed as permanent monitoring wells (in case future groundwater data were needed). EPA-contracted laboratories analyzed the samples for VOCs, SVOCs, PCBs, pesticides, and metals.

What We Found

DEQ found petroleum, chlorinated VOCs, and lead in groundwater, likely from past operations on-site and migration from upgradient sources. Benzene, perchloroethene (PCE), vinyl chloride, cis-1,2-dichloroethene, arsenic, lead, and manganese exceeded acceptable risk values for drinking water. However, DEQ determined that drinking water is not a pathway of concern in this area. Surface soil contained low levels of pesticides, SVOCs, and lead; subsurface soil contained PCE, petroleum compounds, and lead. DEQ concluded that in general, site contamination did not threaten human health or the environment, and active remediation was not needed prior to future residential development. Because redevelopment plans called for an underground parking garage that would require significant soil excavation, perhaps to below the water table, DEQ did raise the possibility of construction crews encountering contaminated soil.

The Next Steps

Because DEQ's TBA reduced the level of uncertainty about environmental conditions at Bertha Triangle, plans for ODOT to sell the property and for a developer to build a new commercial and residential structure are moving forward. In the TBA, DEQ made specific recommendations to manage contaminated soil that could be encountered during proposed construction activities. DEQ also recommended that either the eventual property owner or developer seek assistance from DEQ's Voluntary Cleanup Program to achieve site closure -- i.e., a *no-further-action* determination from the agency.

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June 2002